

Farm Your Back Yard and Reduce High Cost of Living

FARM your backyard and help reduce the high cost of living is the slogan of the Department of Agriculture.

Uncle Sam has taken a flyer in city farming and is sending broadcast through the country bulletins in order to arouse a feeling of interest among the people and induce them to take a chance in home and vacant-lot gardening, which he believes is one of the most logical solutions of the serious problem of the high price of food confronting all classes of society, but weighing heaviest on the man of small salary and large family.

The department has undertaken this educational campaign not only from the standpoint of the growing scarcity of food supplies, the rapid advance in prices and the difficulties of transportation, but for more patriotic reasons, believing that it has a bearing on national preparedness. If the country should become involved in war the necessity for harvesting every resource would be more easily met.

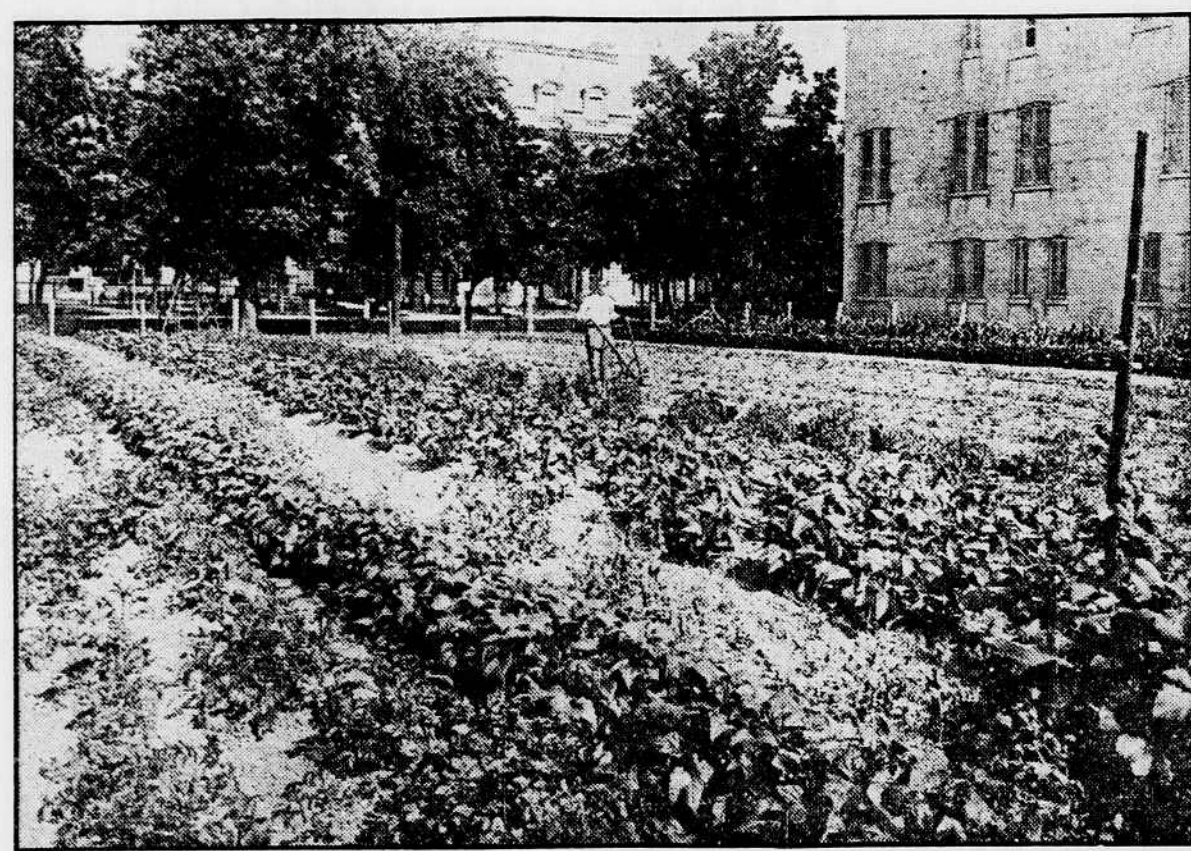
In a recent speech before a meeting of the Federation of Women's Clubs in the District, Carl Frost, assistant secretary of agriculture, asked his audience if they had thought of what the price of food would be in the event of the United States going to war and the government commandeering all transportation and taking over the food supply for the army. Mr. Frost said: "As a matter of food preparedness, as well as economy, I urge you to utilize the vacant acres for farming purposes. Make each region agriculturally independent. It can be done with profit."

He called attention to the fact that the people called on the federal government to reduce the high cost of foodstuffs when they were not lifting a hand to help themselves. He cited several cities where city farming had been adopted a few years ago and where they were entering on a new campaign with vigor, profiting by past experience and getting ready to promote the work among all classes.

The public had a rude awakening several weeks ago, when paying prices for many articles of food which exceeded those commanded by the same commodities in some of the warring countries of Europe. When Ambassador Gifford arrived in America from Berlin he was surprised to find potatoes selling here for the same price per peck, retail, that they were bringing in Germany.

In Italy, reputed as one of the poorer countries of Europe, and at war for nearly two years, wheat bread was selling at 4.1 cents per pound last October, the last month for which figures were obtainable, and wheat flour at 4.3 cents per pound. Contrasted with the United States price per pound of bread in this country in November, which was 6.8 cents, and a pound of flour, 5.6 cents, in February flour retailed in Washington at 5.4 cents a pound, or \$1.35 for one-eighth of a barrel. Comparisons may be uncomfortable to the parties concerned, but the fact remains that for several articles of food in the daily diet of American families living in modest circumstances, prices are higher than they were in the last year of the war between the states.

If scientists who spend their lives in working out problems for the betterment of their fellowmen believe that



USING THE HAND PLOW IN A CITY GARDEN.

backyard farming is the logical solution in the present situation, it is the duty of every patriotic American to rally to their standard and take their part in the campaign. The department offers unusual possibilities for cultivating home gardens, owing to the wisdom with which the increasing provision for wide alleys and wire fencing, thus giving more sunshine and fresh air. The movement would be under the shadow of the Department of Agriculture, which stands ready to co-operate by furnishing all the printed information desired, besides giving advice when asked. It is also able to send out agents to demonstrate the work.

In every part of the city all sanitary conditions are looked to by experts as well as the Commissioners of the District, who give their time in and out of office hours to further city improvement and encourage garden clubs among the school children and citizen associations. In the city of Washington, the back yards offer every inducement of beauty and utility for the encouragement of farming.

Washington is said to have fewer truck gardens than any city of its size in the country, and when compared with other places there seems a prodigality of vacant lots in the District. Philadelphia, Baltimore, Chicago, St. Louis and

Boston possess within their environs numerous small plots in back yards and vacant lots where persons for a few years past have found it possible to reduce their cost of living and furnish their families with succulent lettuce, onions, radishes and even heavier produce directly from the soil to the table. However, the District has had almost no experience in the from-city-farm-to-table luxury, for some ten or fifteen years ago there was a City Garden Association here which was fostered by the late H. H. Warner and other men prominent in municipal matters. They proposed a plan similar to that launched by the Department of Agriculture, the system being modeled on one established in Philadelphia by the late Joseph Pels, millionaire single tax advocate, who founded the vacant lot gardening movement to demonstrate that people would cultivate the land if given the opportunity. The work has been carried on in that city for a quarter of a century, and the scope of the movement has increased each year.

In Washington, when the City Gardening Association existed, back yards, vacant lots and tracts of land owned by the municipality were utilized and extensive gardening was followed by scores of persons, government clerks working their little plots after office hours and finding the exercise and recreation beneficial in every way. Owing to the fact that vegetables at that time were cheap and the cost of living had

not reached its present height, interest lessened and the association was dissolved. The People's Garden Association and other clubs have largely taken its place.

There are a few notable instances of the success of back-yard farming in the capital which seem almost incredible and furnish incontestable proof of what can be done even in the smallest of the city's back yards.

In Southwest Washington, in several of the little gardens back of the sanitary flats, where the space available is perhaps 20x12 feet—and this includes the asphalt walk leading to the door—there are some wonderful examples of these tiny gardens planted with lettuce, peas, radishes, onions, string beans and tomatoes, which have produced for two seasons enough of these vegetables for families of two and three adults. The soil was fully fertilized, the plots tended night and morning, and in one or two places two crows were raised during the summer and fall.

Miss Belle Ellis, one of the best known charity workers in the District, who is now in charge of these flats, says the interest and pride taken in these little gardens is a constant source of encouragement to spur the people on to greater efforts each year, and that

many of the families by their own efforts have fresh vegetables. For health's sake, as well as promoting habits of thrift, it has been a good plan. In striking contrast to these miniature gardens there has been for two seasons past on a fashionable part of 16th street, opposite the Russian embassy, a vegetable garden which is perhaps the most valuable garden plot in the world, being valued at more than \$5,000.

Last spring, passing along this thoroughfare with a few blocks of the White House, pedestrians were treated to the interesting and unusual sight of a two-horse plow turning the rich furrows, just as down on the farm. To many a passer-by this scene brought back memories of days on the farm, when the odor of the freshly turned earth filled their nostrils and the song of the birds was in the air. They had to look twice before it dawned upon them that right in the heart of the capital the ground was actually being prepared for raising a crop of vegetables after the most up-to-date methods.

This city garden plot belongs to the National Geographic Society, and adjoins their property, which runs from M street to the alley fronting on 16th street. It was bought some time ago by the organization for additional

buildings when needed. In the meantime Grafton H. Rice, superintendent and head engineer of the National Geographic Society building, a country-bred man who had a longing to get back to the soil, was given permission to put the ground in order and plant part of it in vegetables for home consumption. It was such a success that the second season Mr. Rice took up all the ground and says that by experience he knows that vacant-lot gardening is one of the best ways to lessen the high cost of living, besides taking a man back to nature and giving him the physical exercise he so much requires in city.

When this lot—100 by 100 feet, approximately—was bought it was graded with cinders. From a nearby apartment house and hotel which was being constructed permission was granted to dump their surplus soil on this lot. This furnished the soil in which the vegetable gardening was done. 288 loads of earth being hauled to the spot, giving practically four inches of earth on top of the ashes and cinders. Mr. Rice says he had an expense of only \$12, of which \$5 was for a hand plow and tools which are used each year; \$3 was paid for fertilizer; some of the seeds were gotten from the Department of Agriculture and some were presented to Mr. Rice. His work was

done in the late afternoons and mornings, and for the plowing he borrowed one horse to hitch with his wife's saddle horse. The plot in July, August, September and October he saved \$15 a month on his living expenses and was able to present his friends with baskets of fresh vegetables. Mr. Rice raised on the lot last season 200 ears of sugar corn, seventy quarts of lima beans, 150 heads of cabbage—these alone would bring an average of 25 cents a head now—twenty-five heads of cauliflower, twenty-five dozen sweet peppers, five bushels string beans, five bushels of beets, fifteen bushels of radishes, ten bushels of parsnips, one bushel peas, ten bushels potatoes, ten dozen cantaloupes, ten dozen cucumbers and twenty-five dozen squash.

This garden in front of the Russian embassy must have had an influence, for word comes from Petrograd that the minister of agriculture has authorized the organization of a group of society women of that city to exploit the vast meadows around Petrograd. The Russian government has agreed to finance a plan to popularize the raising of common garden vegetables by the people and instructors will be sent out to assist in the work. The scarcity of fresh vegetables and canned ones, too,

for non-combatants is due to the policy of the ministry to send all of the best supplies to the armies at the front.

There is a similar garden on Massachusetts avenue which for several years has been farmed with wonderful results. This garden is within a stone's throw of the home of Mrs. Anderson, on 26th street near Wyoming avenue there is a miniature farm scored each year, and all the heavy vegetables are raised to perfection.

The Department of Agriculture would gladly supply the principles to be applied in a practical way to help those who wish to do gardening for the first time. They say that the damage done to garden crops by the recent widespread frost has made it necessary for many owners either to replant gardens or to delay planting beyond the usual time.

Horticulturists advise the gardener who merely wishes to raise vegetables for his own family to choose the crops he will grow from those which produce early. Those who desire early crops should bear in mind that a warm sandy loam will produce an earlier crop than a heavier soil which retains more water and less heat. The essentials for successful gardening on a small scale are: water, soil, fertilizer and much depends on the grower, the season and the crops selected.

Not only the Department of Agriculture has emphasized the importance of planting every available acre with food in the coming season, but financial institutions in different parts of the United States are sending out bulletins calling attention to the need of fostering every resource pertaining to the feeding of more than a hundred million persons.

The March bulletin of the National City Bank of New York says: "It is just as important under present conditions to have reserves of food as reserves of cartridges. When so much depends upon a good crop, it is the part of prudence for the entire community to attend to the production of food from the beginning of the season. There are certain common vegetables which may be raised in small spaces, such as potatoes, beans, onions, etc., which do well in all parts of the country and can be raised in small spaces without machinery, whose production this year in ample quantities should be assured beyond chance or doubt. This garden production can be greatly increased if a popular interest is awakened and systematic efforts are made to place the garden and nearby tracts at the disposal of people who are willing to work them." To facilitate backyard farming may the authorities are of the opinion that the solid board fences so evident in many parts of the city should be done away with and replaced by wire or picket fences. This would give a better chance for nature to do her part. The People's Garden Association, which has been in existence for many years, has been successful in its efforts to have the heavy board fences removed from the city. The removal of these fences would have a tendency to lessen crime and petty infractions of the law, would make the residents of the city more careful and ambitious about sanitary regulations and be a help to good municipal government.



PLOWING A VEGETABLE GARDEN ON 16TH STREET.

This Country May Produce Its Own Potash by End of European Struggle

THE total production of potash salts and potash products in the United States in 1916 was nearly 100,000 tons, with a net value of at least \$3,500,000. This is ten times the value of the production reported in 1915, and the total for the current year is expected to be much greater.

This paragraph, taken from a recent bulletin of the geological survey, is an excellent illustration of the manner in which American genius and inventive skill has stepped into the breach since the commencement of the European war, and has developed new and important sources of potash—a commercial and agricultural necessity which has increased in price tenfold since August, 1914.

Prior to the commencement of the war abroad practically all of our potash was imported from Germany at a cost

of about \$35 a ton. The reason for this was that the world's largest deposit of this precious product is located at Stassfurt, in northern central Germany—a field sufficiently rich in potash-bearing minerals to permit of the exportation of this substance at the comparatively low rate which was current before the outbreak of hostilities. As soon as the war opened, however, this supply was cut off, and the United States faced a potash famine which sent the price up to \$350 and \$400 a ton, with prospects of going even higher.

Some years ago Dr. Cottrell turned his attention to the abatement of the smoke and dust nuisances which were causing so much trouble in different parts of the country. After long and patient experimenting, Dr. Cottrell devised an electrical apparatus for condensing the smoke, fumes and dust from furnaces and manufacturing plants of all kinds, and he discovered that the residue contained considerable quantities of sulphuric acid and other valuable by-products which were being wasted, in addition to causing much inconvenience to the surrounding country. With a single operation, therefore, the government chemist enabled the manufacturing plants to make a considerable saving (by utilizing their formerly wasted products), and at the same time to abate a nuisance which caused many complaints and objections. Had this been the limit of usefulness

process is applicable to dust of this nature," argued the chemist, "why wouldn't it work equally well in our plants?" They therefore decided to experiment with the new invention, and the Cottrell process was installed.

The surprising result was that the new process not only eliminated every bit of the dust fumes, but also gave the cement people a product, formerly wasted by distribution upon the surrounding country, which was found to contain a high percentage of potash. The results were so satisfactory that a project is now under consideration to make potash the main product of the mill, with cement as a by-product, thus completely interchanging the relations of the two substances. When it is considered that this one cement mill recovered, through the use of the Cottrell invention, nearly one hundred tons of dust a day it is easily seen that such a change of policy would not be at all radical, but only natural under the circumstances. The vast cement dust, in fact, will yield more than \$100,000

worth of potash, of which 50 per cent, or more than \$50,000, was clear profit. As a result, cement companies throughout the country are now generally taking notice of this easy and comparatively inexpensive method of producing potash, and many of them at the same time saving a considerable amount of trouble and expense incident to injunctive and damage suits arising from complaints of nearby property owners. Dr. Cottrell's invention first proved that smoke is very valuable; that, as a by-product, the manufacture of cement, potash can be made at such a price as to make it profitable in normal times at normal prices.

The dropping of the dust nuisance in California by the use of the Cottrell process immediately drew the attention of those interested to another use for the government invention—to obtain potash from the gases of the blast furnaces which manufacture iron and steel. The dropping of the dust nuisance in California by the use of the Cottrell process immediately drew the attention of those interested to another use for the government invention—to obtain potash from the gases of the blast furnaces which manufacture iron and steel.

enough thoroughly to arouse the cement manufacturers of the country to its importance. The character and local distribution of this industry is such as to insure a quite general adoption of the potash by-product feature wherever feasible and advantageous. It also seems probable that in the location of new cement mills the matter of the potash content of the raw materials will come to be one of the normal determining features.

With regard to potash from the iron blast furnaces less progress has been made, but the bureau's metallurgists believe that there are possibilities there quite comparable with those in the cement mills, and have been urging upon those in authority in the industry the importance of not only a careful examination of blast furnace dusts and gases for potash, but likewise the necessity for systematic studies on the effect on operating conditions of the same, with the object of obtaining the maximum possible yield of potash.

The bureau of mines has so far refrained from attempting to publish actual estimates of what might be produced in this way, since potash has been so

selfes all of those products for which we have had to depend upon foreign countries.

If an old that the by-product coke ovens now under construction will be capable of an output of 200,000 tons of coke a month. What this means in by-products of various kinds is of immense importance to the country industrially and commercially. But the recovery of potash from cement dust and blast furnaces is not the only phase of American ingenuity which has been apparent in solving the difficult problem of obtaining sufficient potash.

The kelp beds of the Pacific have been a widely advertised source from which this important salt may be obtained, and eight or ten plants have been erected to extract potash from this species of seaweed. According to the reports of the geological survey, however, the entire output of all the kelp plants during the last year only

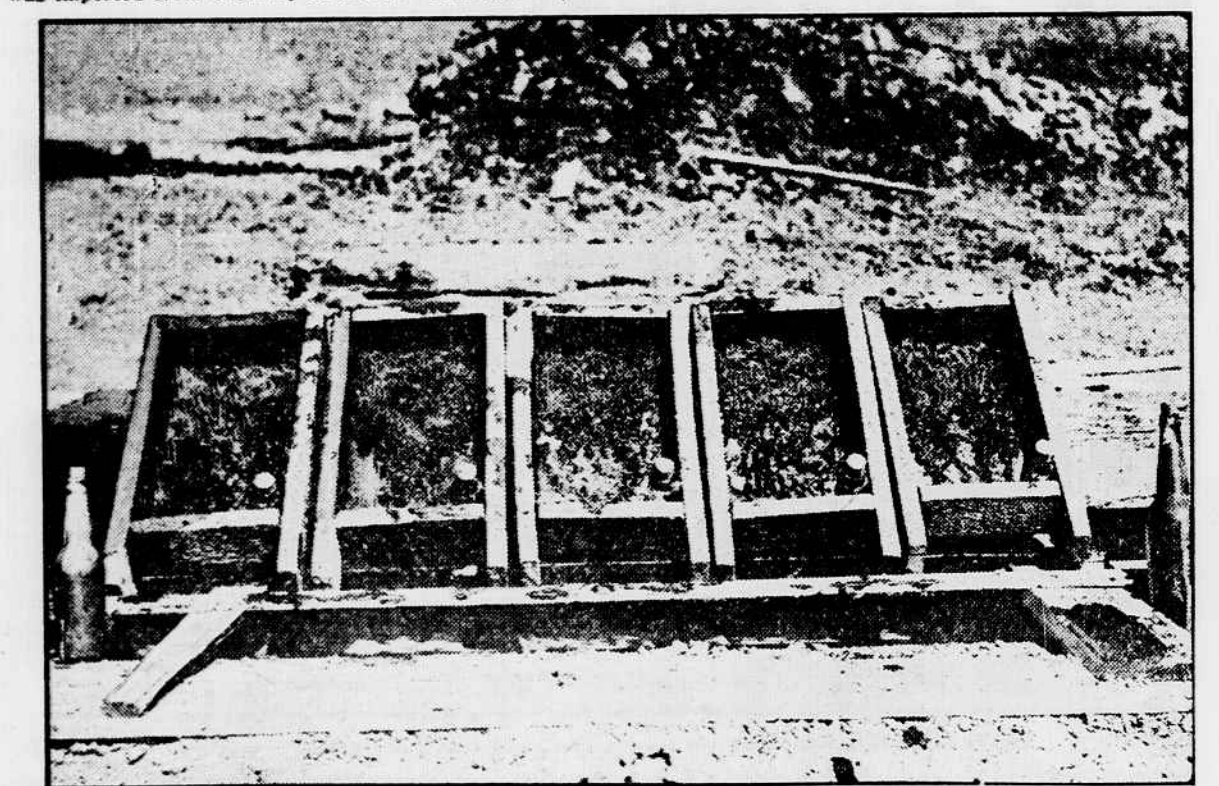
amounted to 1,110 tons, or less than one per cent of the total requirement.

Operating company has been able to clear a large amount of money from material formerly thought to be worthless. But, by combining them with the potash saved by the Cottrell process and that which the geological survey has located in various sections of the country, the United States will probably be in a position by the end of the war to inform Germany that it has learned to produce its own potash and that it is not necessary to import any.

These miscellaneous industrial products, formerly considered of no value, yielded, last year, 1,750 tons of potash valued at considerably more than half a million dollars—which may be taken as another instance of the unceasing work of the government to utilize even the "squalor of the pit," for the cotton burr hulls and "vinasse" (a distillery

refuse) were formerly considered as having no possible commercial value whatsoever. But, by combining them with the potash saved by the Cottrell process and that which the geological survey has located in various sections of the country, the United States will probably be in a position by the end of the war to inform Germany that it has learned to produce its own potash and that it is not necessary to import any.

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THE POTASH-RICH MUD AS IT IS SECURED BY THE GEOLOGICAL SURVEY.

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America, therefore, faced the alternative of either doing without potash—a condition which would seriously hamper many industries in this country—or of manufacturing it herself. The statement made in the bulletin of the geological survey shows that she chose the latter course, and according to the estimates of government experts connected with the survey and the bureau of mines, it is highly probable that the end of the war will find Germany without a profitable potash market in this country, owing to the fact that the United States will have learned to produce enough for its own uses at a price which will compare favorably with that of the foreign product.

One of the most interesting features of this home production of a substance which was formerly thought impossible

of the Cottrell process, for which a public service patent, making it available for the use of every one without the payment of royalty, was applied for, the invention would have been immensely valuable. But another and very important use in connection with the potash industry was accidentally discovered—a use which opens up an entirely new field, which gives promise of making the United States independent of foreign potash production.

A great cement mill in the orange-growing district of California was sending tons of dust daily into the air. The wind carried this dust and deposited it on the orange groves, seriously injuring the trees and their fruit. When the owners of the land in the vicinity protested, the cement men began buying in the nearest groves at \$1,000 an acre, but were finally forced to desist on account of the immense expense involved. Before they had stopped, however, the had sunk nearly a million dollars in the purchase of land and other expenses connected with the orange and damage question, without securing permanent relief. The dust nuisance was unabated, and the orange growers banded together to file suit against the cement works and ask injunctions.

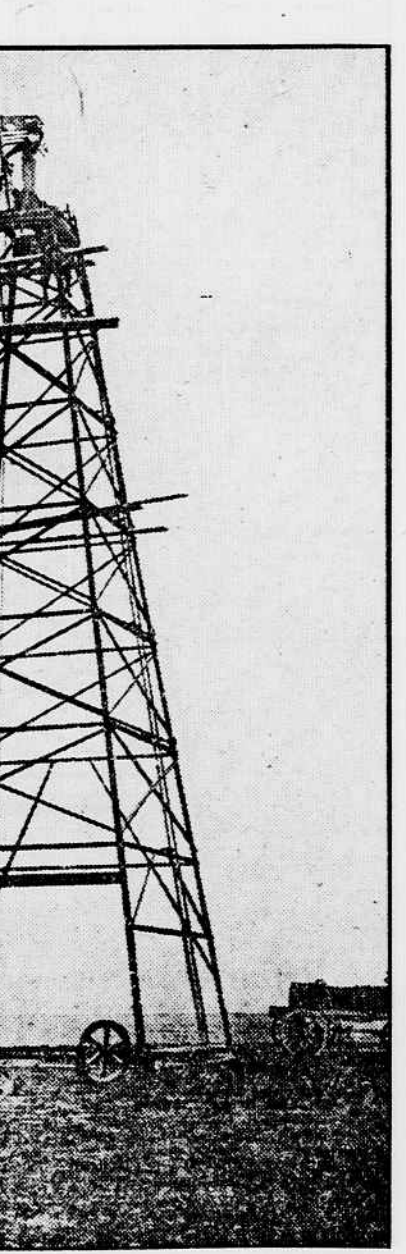
About this time the attention of the mill owners was attracted to Dr. Cottrell's invention for the precipitation of dust. They immediately installed the

worth of potash, of which 50 per cent, or more than \$50,000, was clear profit. As a result, cement companies throughout the country are now generally taking notice of this easy and comparatively inexpensive method of producing potash, and many of them at the same time saving a considerable amount of trouble and expense incident to injunctive and damage suits arising from complaints of nearby property owners. Dr. Cottrell's invention first proved that smoke is very valuable; that, as a by-product, the manufacture of cement, potash can be made at such a price as to make it profitable in normal times at normal prices.

Another company, near Hagerstown, Md., which from its location did not have to bother about the dust nuisance, has voluntarily installed the Cottrell process in order to save potash, which it estimates at about four tons a day—or \$1,900 a day which was formerly allowed to disappear into the air. A number of experts on cement manufacture declare that the present mills in this country, properly equipped, are capable of turning out 100,000 tons of potash a year, which is about one-fourth of the amount imported from Germany in normal times. This, it should be remembered, would not necessitate the use of any new products,

but only the utilization of a substance which was formerly not only a waste, but likewise a detriment to the industry. It is further declared that there will be sufficient incentive to establish new mills located near deposits that are rich in potash, and that in the future no cement mill will have a haphazard location. It is even intimated that the municipality were utilized and extensive gardening was followed by scores of persons, government clerks working their little plots after office hours and finding the exercise and recreation beneficial in every way. Owing to the fact that vegetables at that time were cheap and the cost of living had

Charles Cottrell, of Staunton, Va., a chemist and metallurgical expert, is authority for the statement that the by-products which can be collected from the blast furnace gases are of sufficient value profoundly to affect the question of the manufacture of iron in certain sections and from certain materials. He refers to the making of potash from blast furnace gases as a "contribution to industrial pro-



RAISING THE FLAG TO A NEW POTASH SHAFT, SUNK BY THE GOVERNMENT.

enough thoroughly to arouse the cement manufacturers of the country to its importance. The character and local distribution of this industry is such as to insure a quite general adoption of the potash by-product feature wherever feasible and advantageous. It also seems probable that in the location of new cement mills the matter of the potash content of the raw materials will come to be one of the normal determining features.

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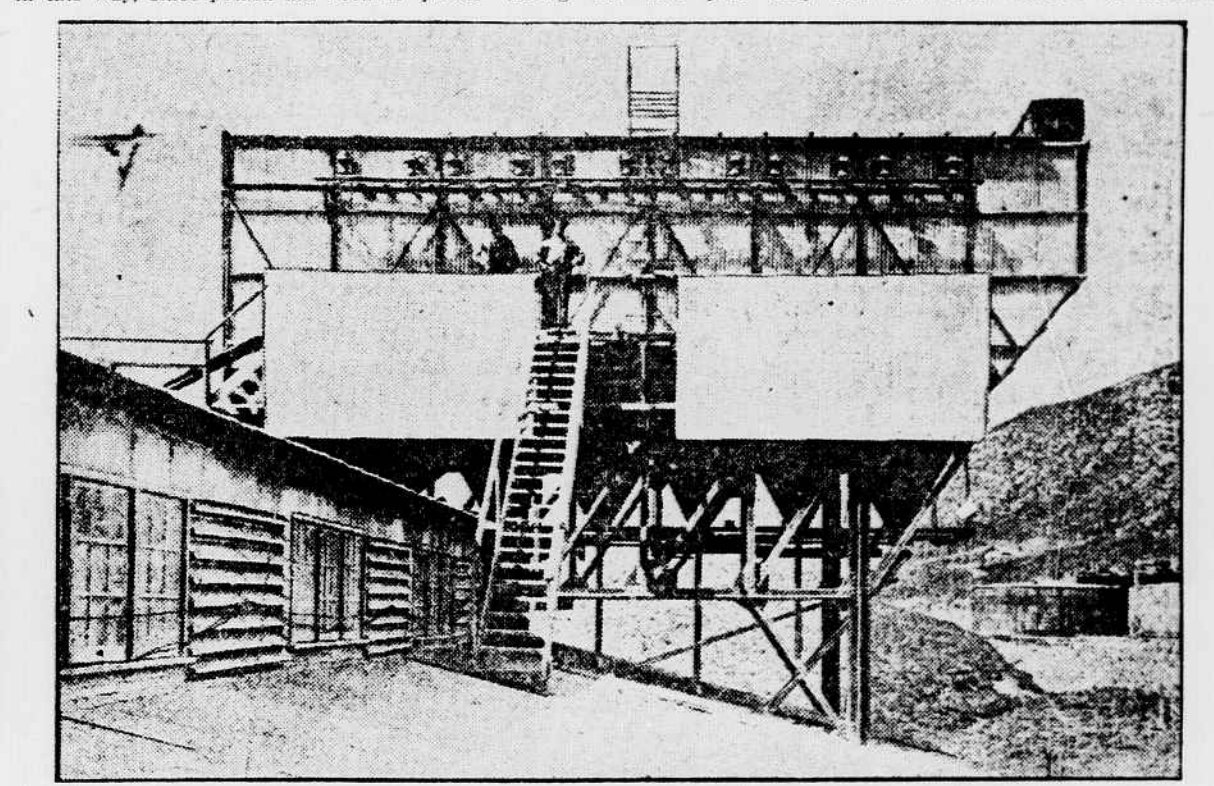
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THE PRECIPITATOR THAT SAVED 100 TONS OF POTASH-RICH DUST A DAY.

generally ignored in the chemical work of the iron industry, and a review of the whole field would be necessary before we could safely draw definite conclusions. Furthermore, the question of just how much of the potash recoverable appears as cyanide and how much as carbonate, sulphate or other compound is an important one to be determined experimentally under various conditions, as this will have a very direct bearing on its adaptability for agricultural or other uses.

"The bureau of mines has been attempting to follow up this subject and to collect the necessary information wherever possible; but the limited funds at its disposal for such work make the process necessarily slower than could be desired. For this reason the bureau wishes all the more earnestly to obtain the cordial co-operation of all those in position to aid in the accumulation of data and, particularly, in the study of effects of variation of operating conditions on potash elimination. However, the country is making such progress in solving the problems that have been put up to us by the inconvenience of the great war that it now looks as if we will in the future be able to make for our-

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A Good Collector.

BISHOP BRISTOL of Omaha, in the course of an address in behalf of a deserving charity, told a story about the late Gen. Booth of the Salvation Army. "If I could only elicit money from a congregation as the general could," he said. "Once, when the general was addressing a vast audience, the officers, fearing that he could not be heard, began to move softly about, closing all the windows. 'Half had been closed, and the air had already begun to get hot and foul, when the general promptly ordered the officers to stop. 'Don't suffocate them till after the collection,' said Gen. Booth."